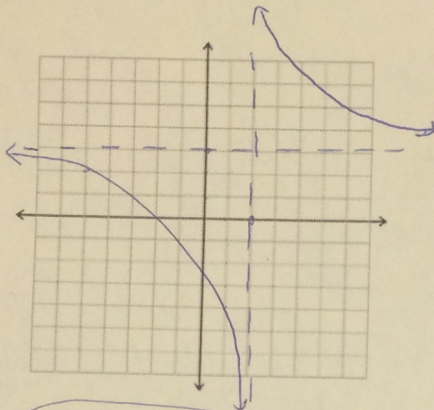


Rewrite the function in the form $f(x) = q(x) + \frac{r(x)}{d(x)}$, then write the transformations from its parent function and sketch a complete graph of $f(x)$.

1. $f(x) = \frac{3x+1}{x-2}$

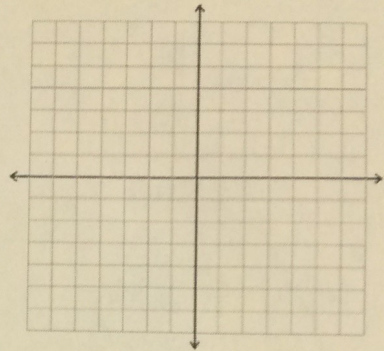
$$\begin{array}{r} +2 \overline{) 3 \ 1} \\ \underline{6} \\ 3 \ 7 \end{array}$$

$$f(x) = \frac{7}{x-2} + 3$$

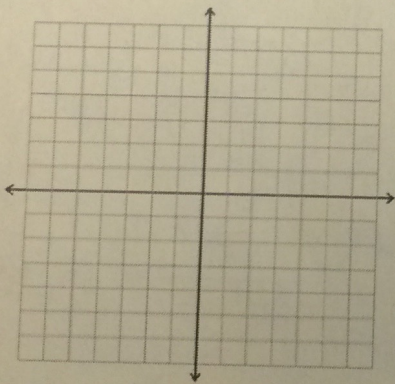


- Transformations:
- Shift Right 2
 - Shift up 3
 - V. Stretch by 7

2. $g(x) = \frac{x+2}{x-1}$



3. $h(x) = \frac{x-1}{x+1}$

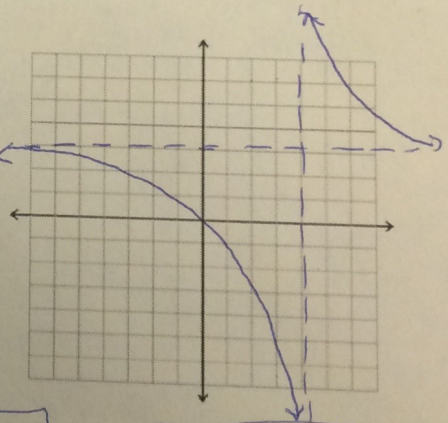


4. $j(x) = \frac{3x+6}{x-4}$

$$j(x) = \frac{3x+6}{x-4}$$

$$\begin{array}{r} +4 \overline{) 3 \ 6} \\ \underline{12} \\ 3 \ 18 \end{array}$$

$$j(x) = \frac{18}{x-4} + 3$$

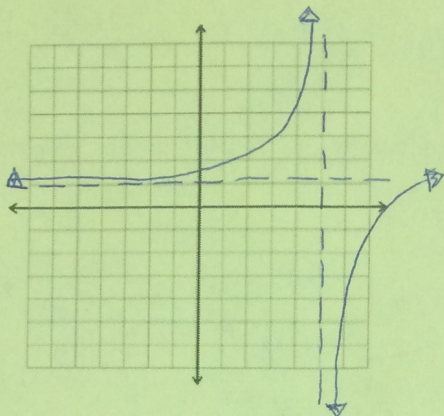


- Transformations:
- Shift Right 4
 - Shift up 3
 - V. Stretch by 18

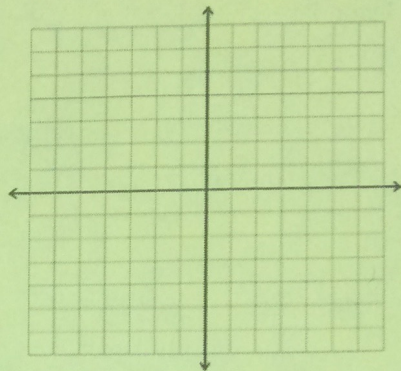
$$7. f(x) = \frac{x-7}{x-5}$$

$$\begin{array}{r} 5 \mid 1 \quad -7 \\ \quad \downarrow \quad 5 \\ \quad \quad 1 \quad \boxed{-2} \end{array}$$

$$f(x) = \frac{-2}{x-5} + 1$$



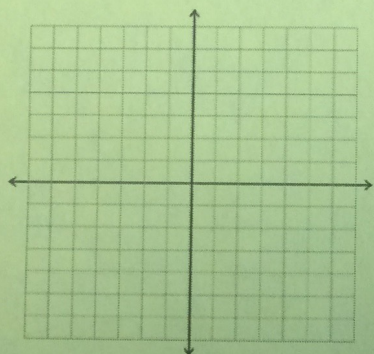
$$8. f(x) = \frac{3x+5}{x+2}$$



Transformations:

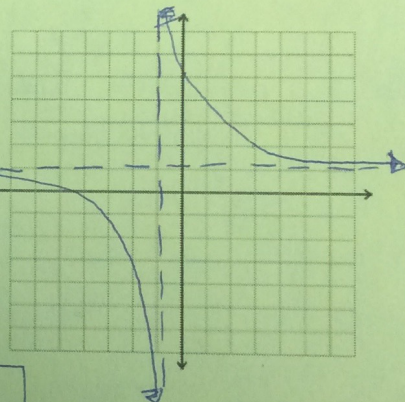
- V. Flip
- V. Stretch by 2
- Shift Right 5
- Shift up 1

$$9. f(x) = \frac{x-1}{x+1}$$



$$10. f(x) = \frac{x+5}{x+1}$$

$$\begin{array}{r} -1 \mid 1 \quad 5 \\ \quad \downarrow \quad -1 \\ \quad \quad 1 \quad \boxed{4} \end{array}$$



$$f(x) = \frac{4}{x+1} + 1$$

Transformations:

- V. Stretch by 4
- Shift Left 1
- Shift Up 1